GDI

A two-prong Approach for Architecting MMIS Modernization and Rapid HIPAA Implementation

February 11, 2002

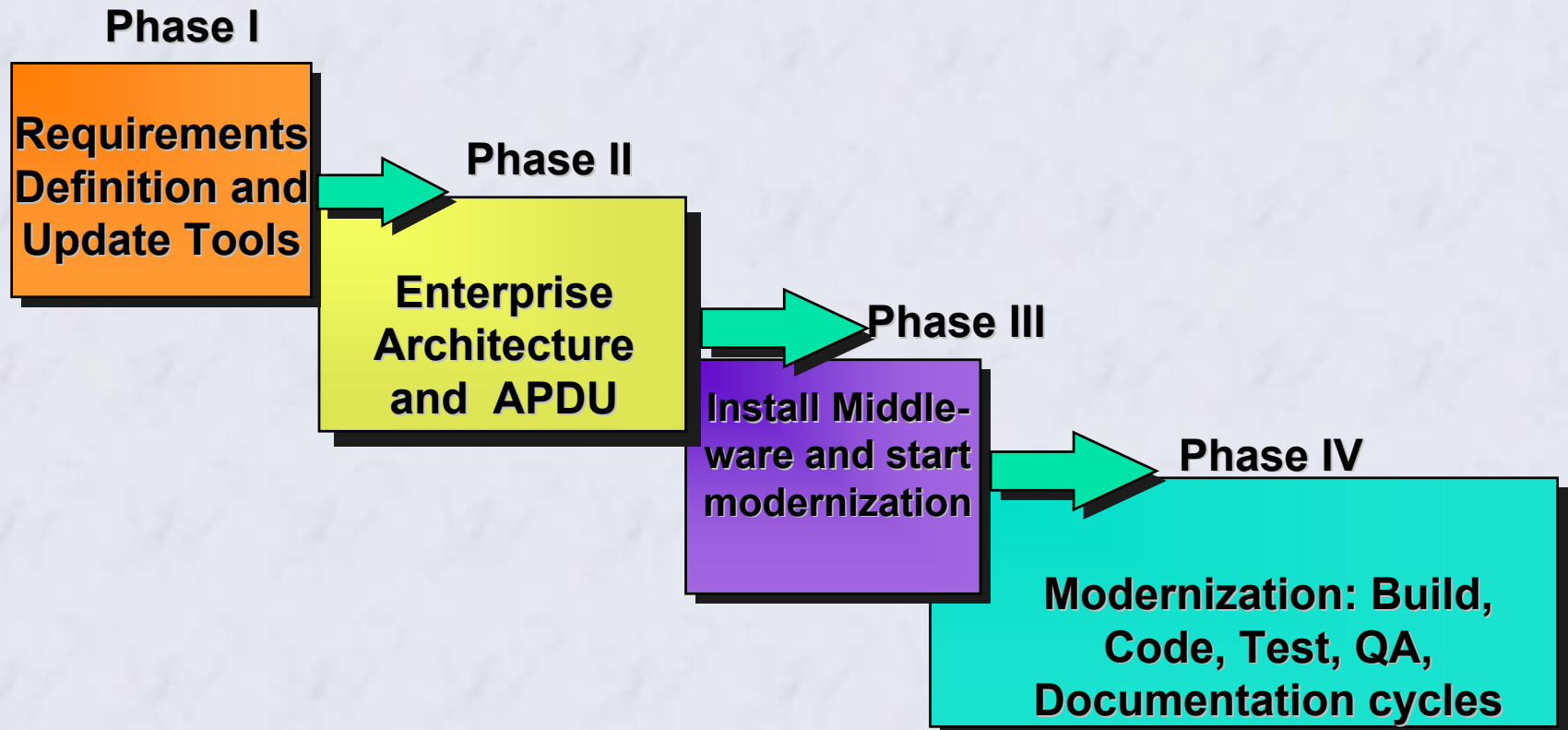# Overview of the Technical Approaches

George Mapp – Information Management Corporation

Agenda

- Agenda and Introduction.
- Enterprise Architecture (EA) for MMIS.
- MMIS Modernization within existing budgets.
- The GDI Middleware Platform.
- Rapid HIPAA IT Implementation.
- HIPAA Demonstration.
- Questions & Answers.

Phases: Requirements Through Implementation

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Phase I

Requirements Definition and Update Tools

Phase II

Enterprise Architecture and APDU

Phase III

Install Middle-ware and start modernization

Phase IV

Modernization: Build, Code, Test, QA, Documentation cycles

Enterprise Architecture (EA) Overview

- Introduction
- Earned Value
- Performance Initiatives

Don Betts – EDS Corporation

Enterprise Architecture Framework

Historically, the framework defining the process for developing an Enterprise Architecture is:

- *Obtain Executive and Business Owners Buy-in and Support*

- *Establish Management Structure and Control*

- *Define Architecture Process and Approach*

- *Validate Baseline Enterprise Architecture*

- *Develop Target Enterprise Architecture*

- *Develop Sequencing Plan*

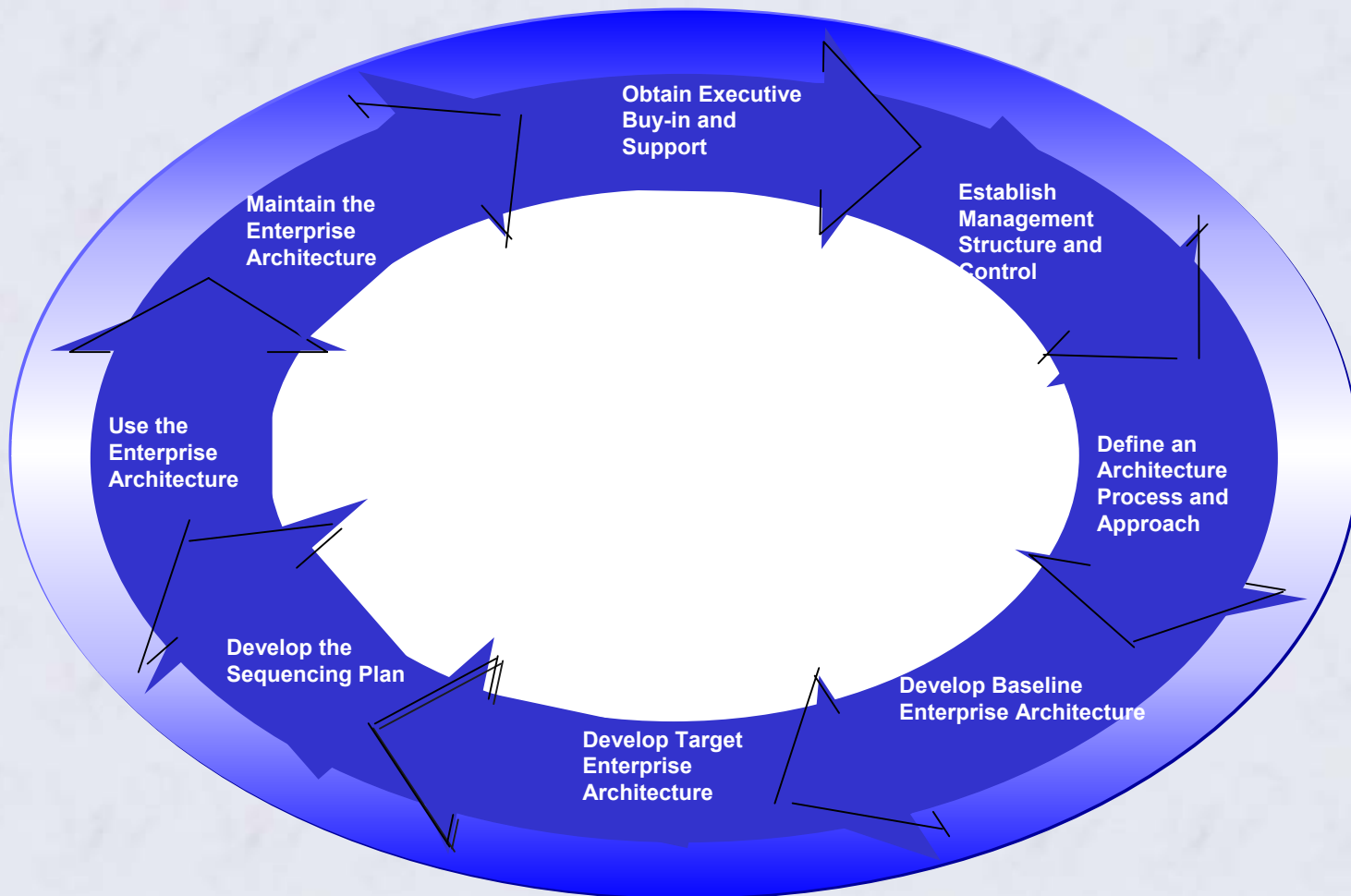- *Implement Enterprise Architecture*

- *Maintain Enterprise Architecture*

Common Problems Associated with Enterprise Architecture Framework

- *Justification for expenditures to build the Enterprise that supports the business vision.*

- *Linking strategic business opportunities to technological enhancements returning major performance and cost benefits.*

- *Implementing scheduled enhancements, " Development of a Quick Hits philosophy" that supports long term strategic enhancements and savings to support purely functional innovation design for improvements in functional business processes and customer service operations.*

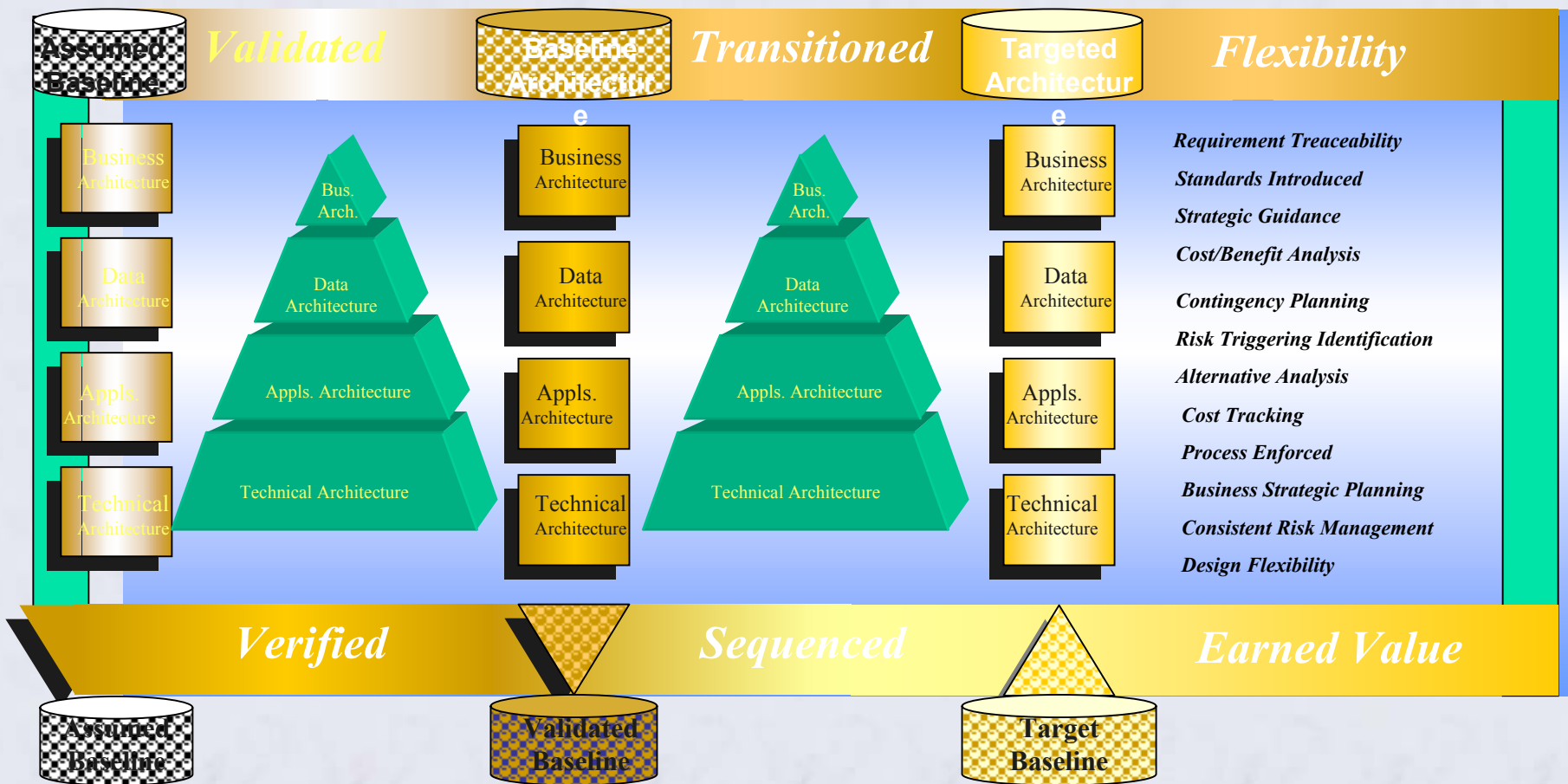- *Enforcing feed-back models which support continue evolution of the Enterprise.*

Enterprise Architecture Framework

Obtain Executive Buy-in and Support

Establish Management Structure and Control

Maintain the Enterprise Architecture

Use the Enterprise Architecture

Define an Architecture Process and Approach

Develop the Sequencing Plan

Develop Target Enterprise Architecture

Develop Baseline Enterprise Architecture

Earned Value Process Model……..

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Validated   *Transitioned*   *Flexibility*

Assumed Baseline

Baseline Architecture

Targeted Architecture

Business Architecture

Data Architecture

Appls. Architecture

Technical Architecture

Bus. Arch.

Data Architecture

Appls. Architecture

Technical Architecture

Business Architecture

Data Architecture

Appls. Architecture

Technical Architecture

Bus. Arch.

Data Architecture

Appls. Architecture

Technical Architecture

Business Architecture

Data Architecture

Appls. Architecture

Technical Architecture

Requirement Treaceability

Standards Introduced

Strategic Guidance

Cost/Benefit Analysis

Contingency Planning

Risk Triggering Identification

Alternative Analysis

Cost Tracking

Process Enforced

Business Strategic Planning

Consistent Risk Management

Design Flexibility

Verified   *Sequenced*   *Earned Value*

Assumed Baseline

Validated Baseline

Target Baseline
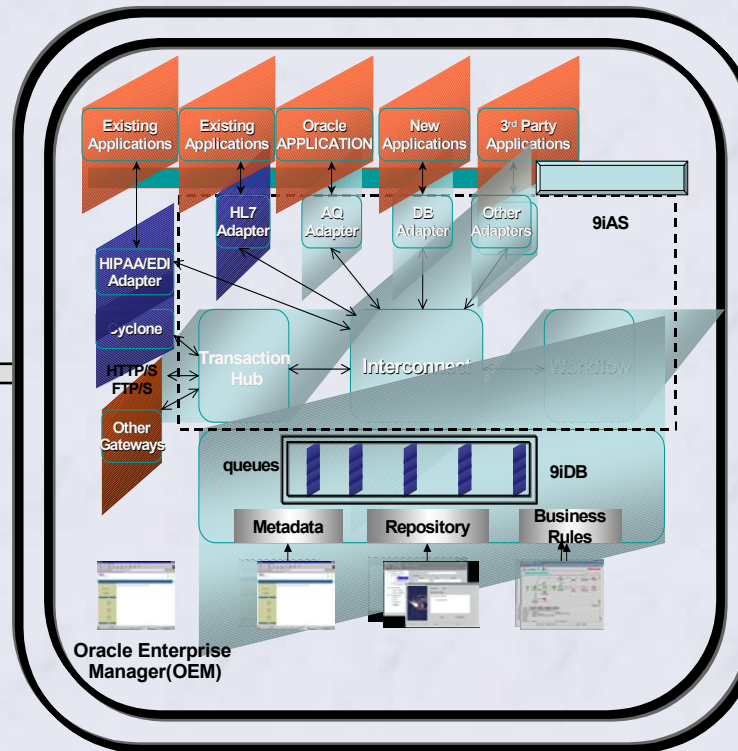
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State-of-the- Art Integration Hub

- An Enterprise Solution that supports a specific vendor implementation –

Portal

Unified Messaging

Business Vision Focus

Supports Wireless and Mobile Connectivity

Web Enabled

**Support Regional Oversight by Utilizing Clustering and Data Caching Technology**

Protocol Independent

Supports Most Integration

Secure and Reliable

Existing Applications · Existing Applications · Oracle APPLICATION · New Applications · 3rd Party Applications

HL7 Adapter · AQ Adapter · DB Adapter · Other Adapters · 9iAS

HIPAA/EDI Adapter · Cyclone · HTTP/S FTP/S · Other Gateways

Transaction Hub · Interconnect · Workflow

queues · 9iDB

Metadata · Repository · Business Rules

Oracle Enterprise Manager(OEM)

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Performance & Service Enhancements to Existing IT Infrastructure [A mainframe middleware example]
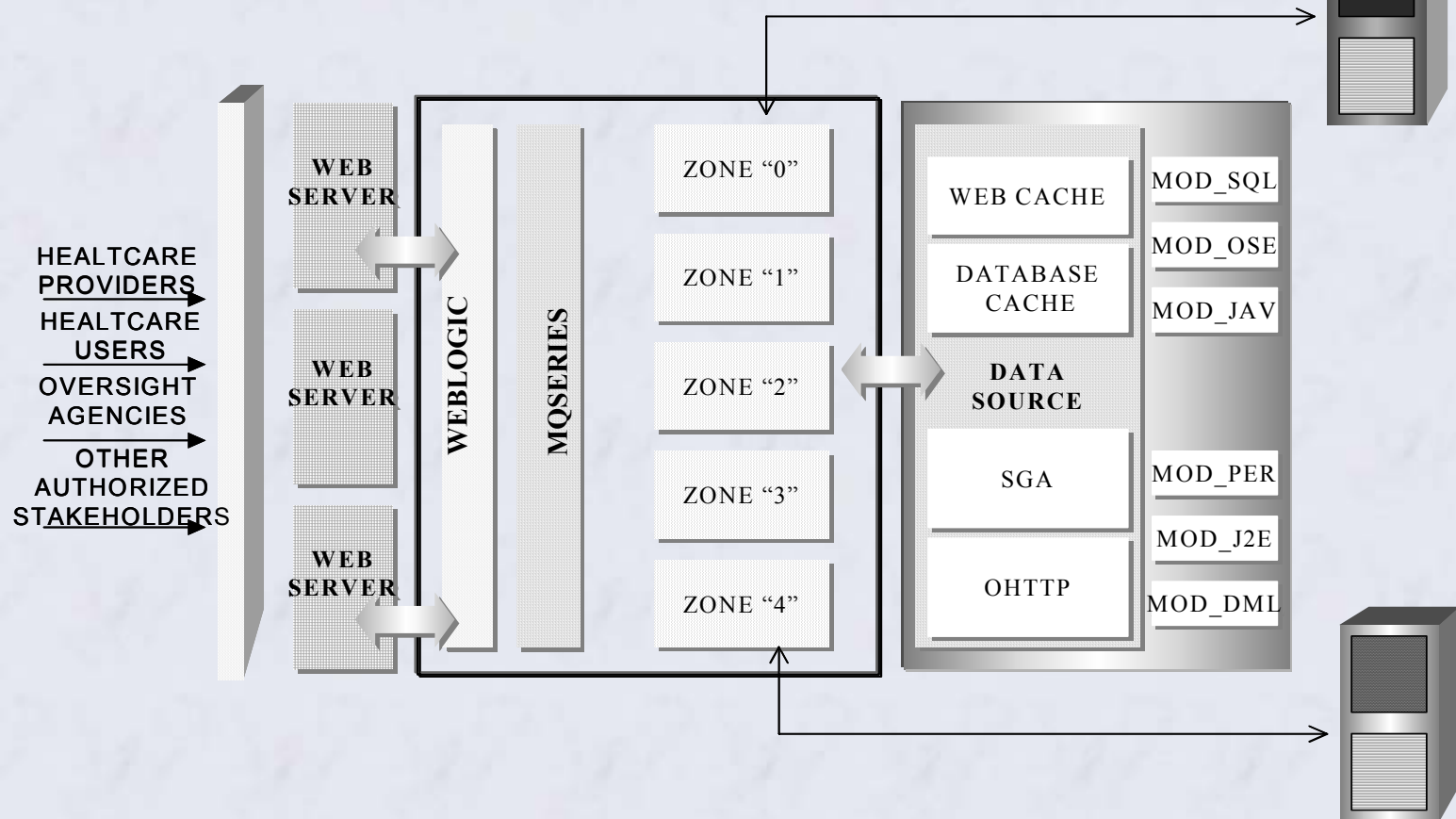
Earned - Value Savings and Enhancements
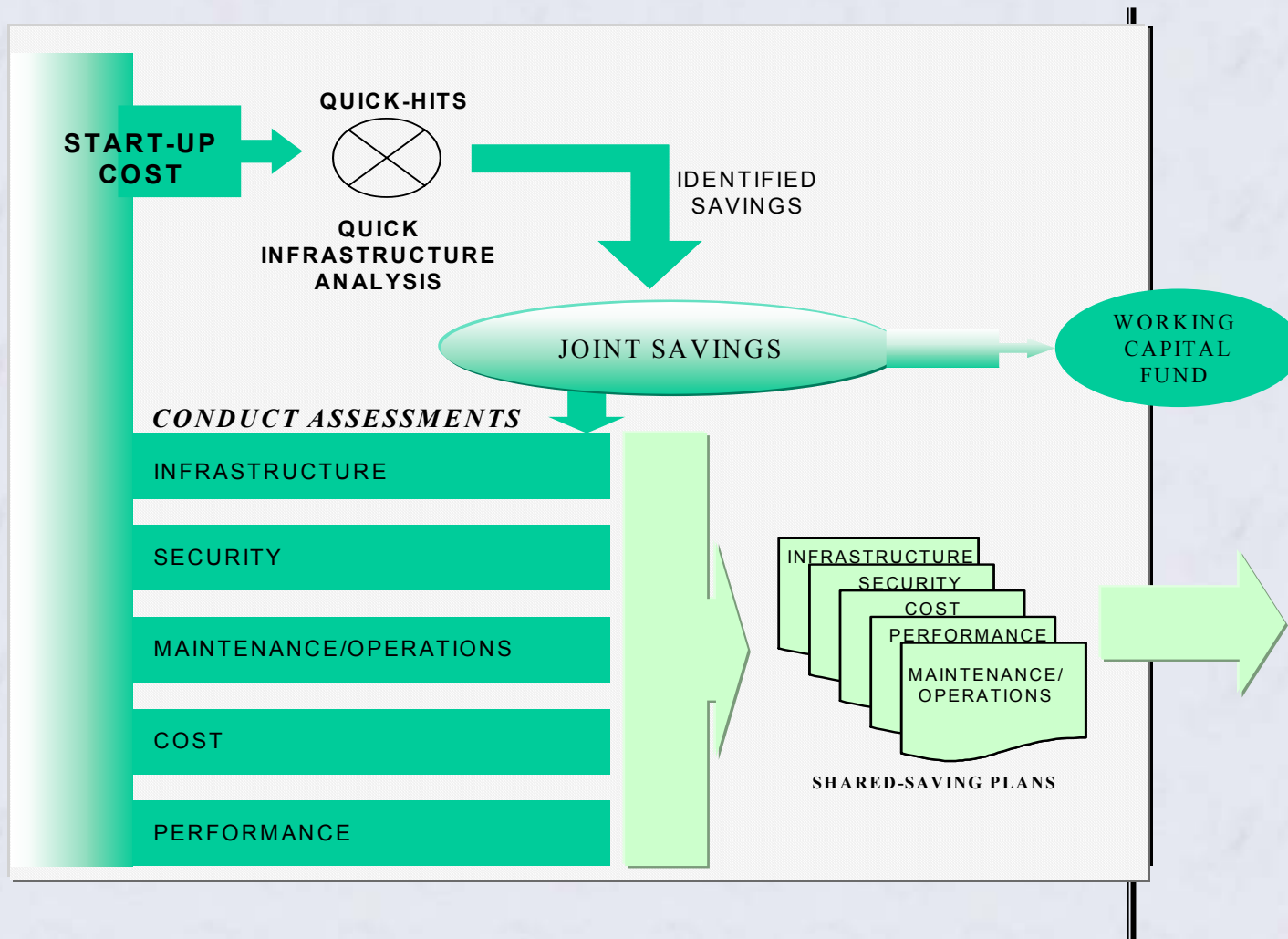
Performance Oriented Implementation
(Reducing the normal operating cost by reducing WCF)

PHASE I
ASSESSMENT/BASELINES
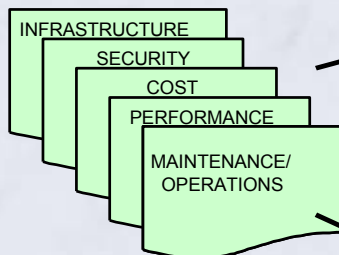
PHASE II
DESIGN

PHASE III
IMPLEMENTATION

GOVERNMENT FUNDED

- *MAXIMUM RETURN OF SAVINGS*
- *HIGHER RISK TO INVESTMENT CAPITAL*
- *REQUIRES BUDGET MANAGEMENT FOR ENHANCEMENTS*

NEW PROCUREMENT FUNDING

WORKING CAPITAL INPUT

Government Savings $$$$$

Share $

Contractor FUNDED

- *LOWER RATE OF RETURN OF SAVINGS*
- *LOWER RISK TO INVESTMENT CAPITAL*
- *PERFORMANCE   -BASED CONTRACTING*

NEW PROCUREMENT FUNDING

Government Savings $$

Share $$$$

INFRASTRUCTURE
SECURITY
COST
PERFORMANCE
MAINTENANCE/
OPERATIONS

SHARED   -SAVING PLANS

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Snapshots from the IMC Application Modernization Methodology

• **From Architecture to Implementation**
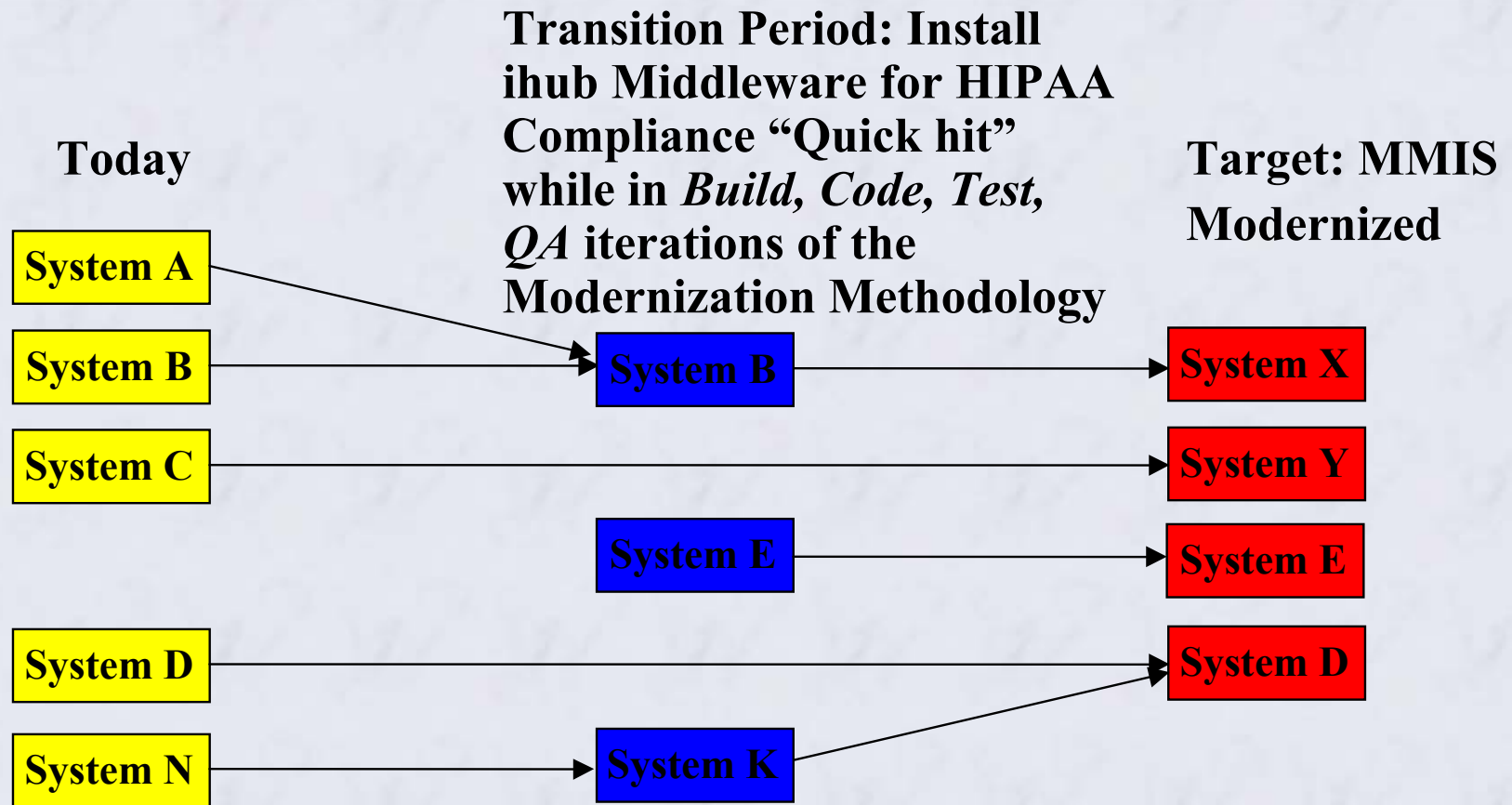•**Selected Methodology Components**

George Mapp

Phase I

Requirements Definition and Update Tools
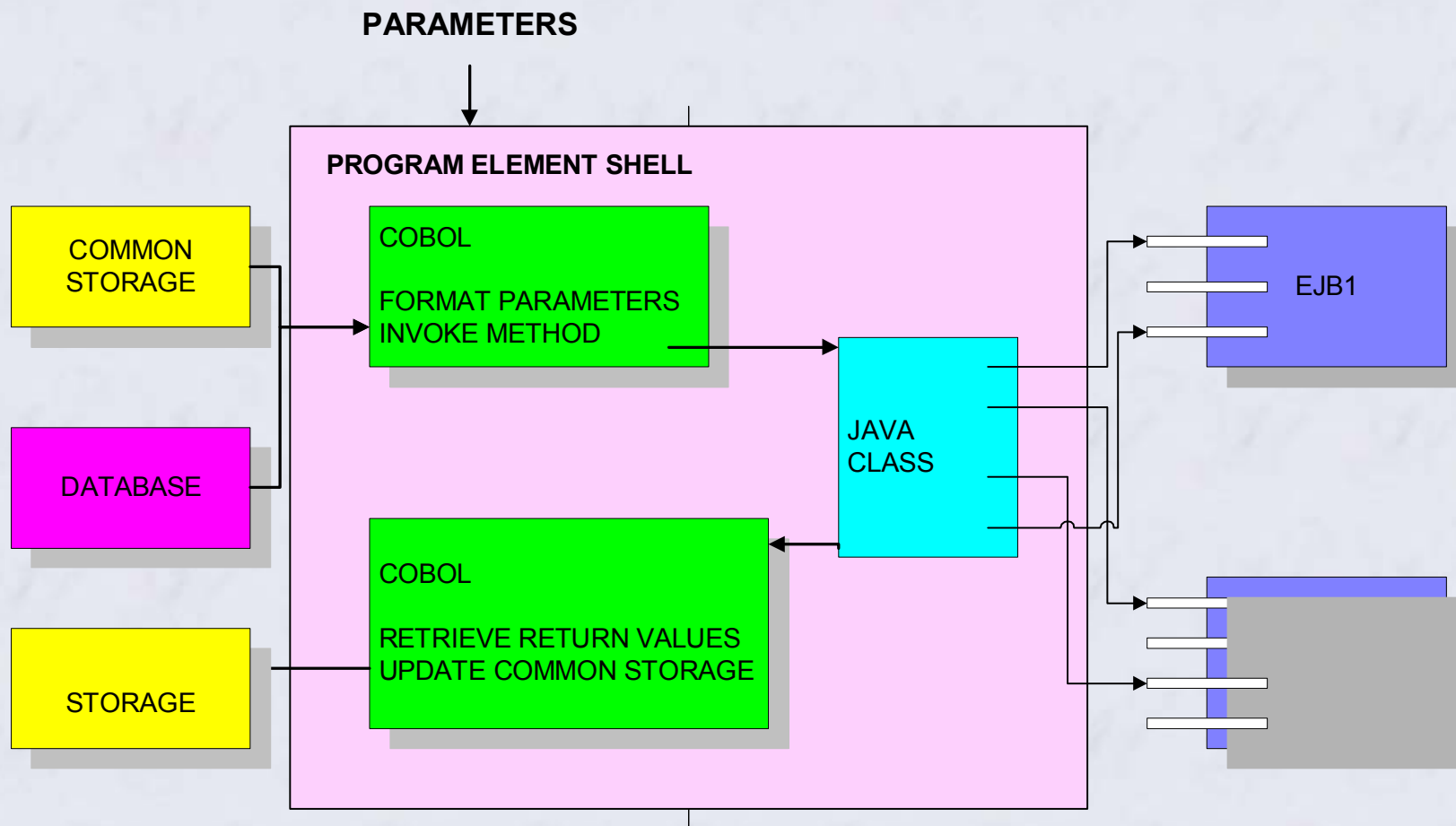
Phase II

Enterprise Architecture and APDU

Phase III

Install Middle-ware and start modernization

Phase IV

Modernization: Build, Code, Test, QA, Documentation cycles

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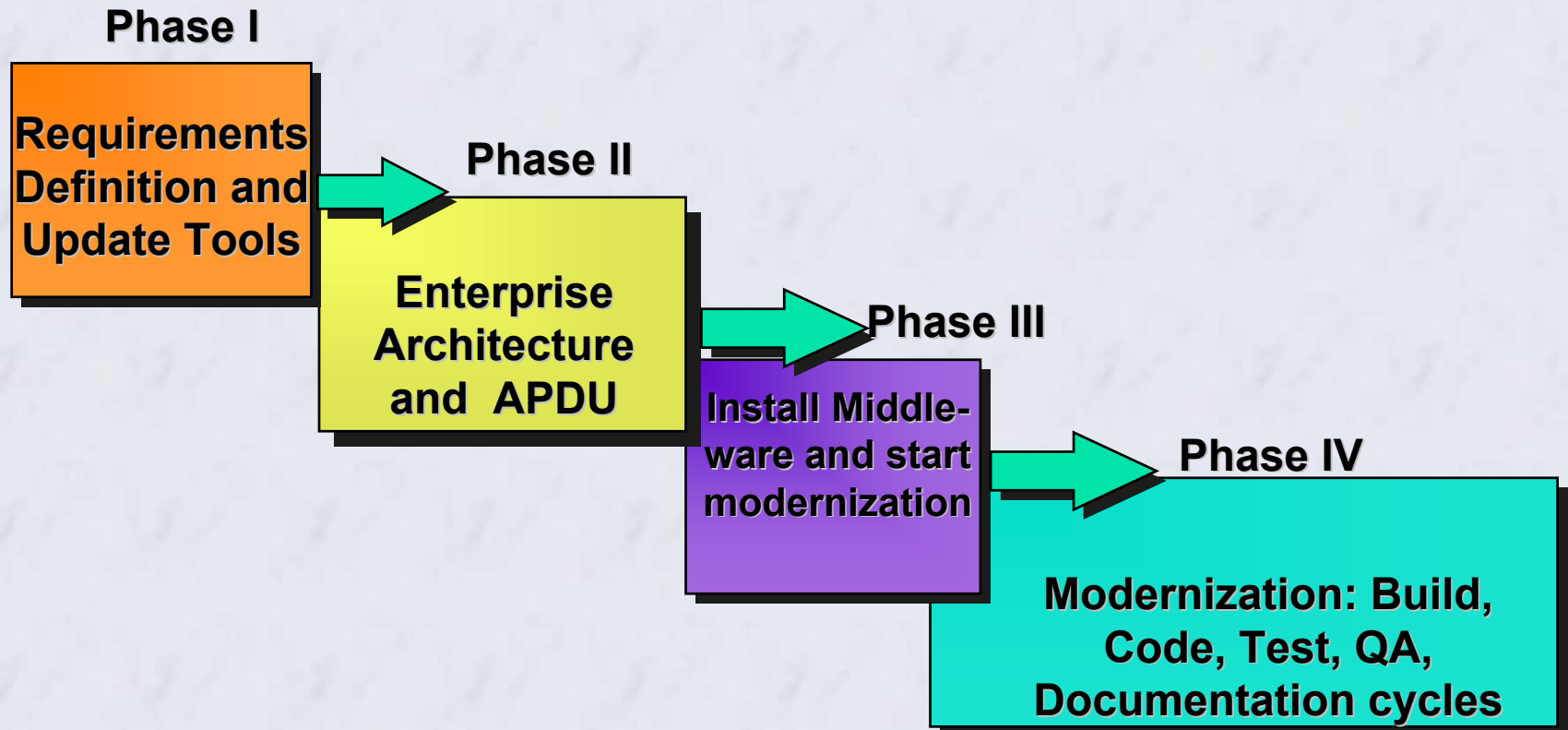
The Focus is on Implementation

IMMEDIATELY BEGIN START-UP TASKS	DETERMINE WHICH IMPLEMENTATION APPROACH(ES)	SELECT IMPLEMENTATION & DB PLATFORM
"Piggyback" on prior and current initiatives, such as, MITA, FEAF, etc.	Two-prong Approach: Install Middleware and Start Modernization;	Oracle 9iAS (Application Server) and JAVA Adapters
Populate Enterprise Architecture and Development Toolsets.	Customize Transfer System to Specs within Methodologies;	IBM MQ Series Middleware and DB2 database
Complete Functional & Technical Requirements, Update APDU and Update Toolsets.	New Component Development within Methodologies.	Microsoft .net and Visual Studio.net

Today

Transition Period: Install ihub Middleware for HIPAA Compliance "Quick hit" while in *Build, Code, Test, QA* iterations of the Modernization Methodology

Target: MMIS Modernized

System A

System B → System B → System X

System C → System Y

System E → System E

System D → System D

System N → System K

Overview of COBOL-to-JAVA Legacy Modernization Adapters

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The Adapters provide a mapping between program functions in the Legacy and Modernized applications [see below as Enterprise JAVA Beans (EJB)]

PARAMETERS

PROGRAM ELEMENT SHELL

COMMON STORAGE

DATABASE

STORAGE

COBOL

FORMAT PARAMETERS INVOKE METHOD

COBOL

RETRIEVE RETURN VALUES UPDATE COMMON STORAGE

JAVA CLASS

EJB1

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Overview of Legacy-to-Modernization Transition of Computer Programs: COBOL to JAVA Example

COBOL TO JAVA (ADAPTERS)

LEGACY

DEPENDENCIES

MODERNIZED

JAVA TO COBOL (ADAPTERS)

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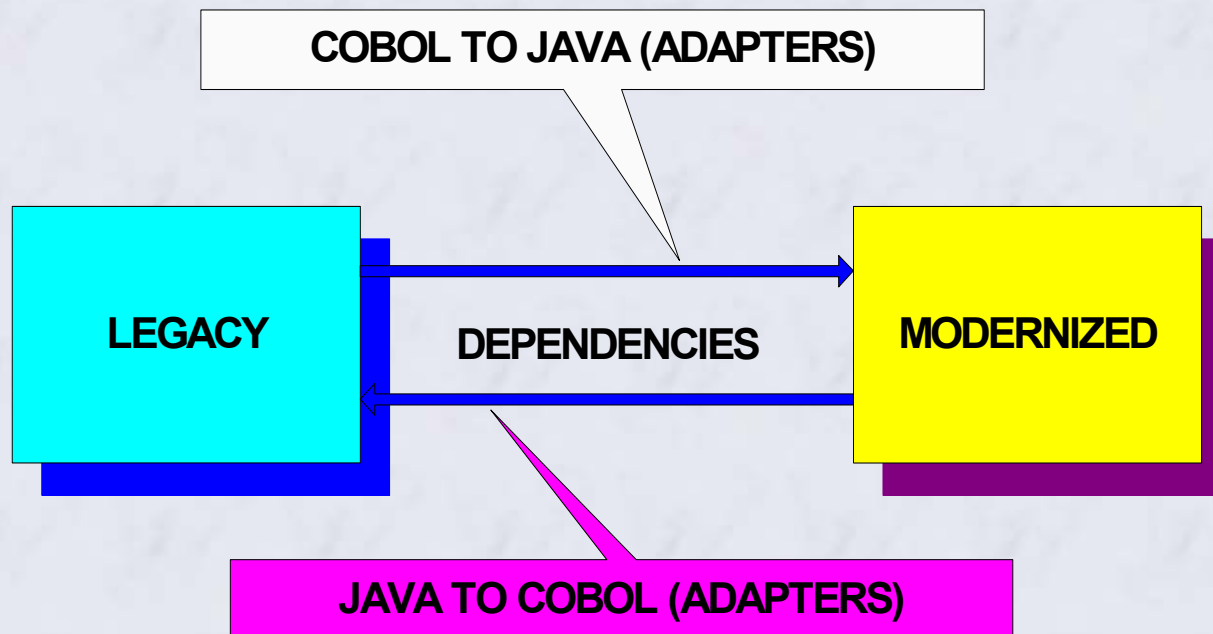
- Key strategy is to modernized legacy MMIS applications within current budgets, while concurrently writing APDU.

- Integrate a world-class Enterprise Architecture Toolset with IMC development platform for rapid, *componentized,* implementation of the modernized enterprise-level plan.

- Consulting staff with "hands-on" programming experience on major entitlement applications, including MMIS.

- Concurrently re-write APDUs to leverage new technology.

- Corporate relationship with GDI for implementing HIPAA requirements within federal deadline dates.

- Deploy operational development platforms, and strong staff skills, in S/390,VSAM/DB2, Unix, Oracle 9*i* and Windows.net.

- *The right tools,expertise,timetables and cost for success!*

Evolution of the Xtender_{tm} Integration Hub Middleware

- Background
- Approach for HIPAA Compliance
- Two Case Studies

Paul K. Chang - GDI

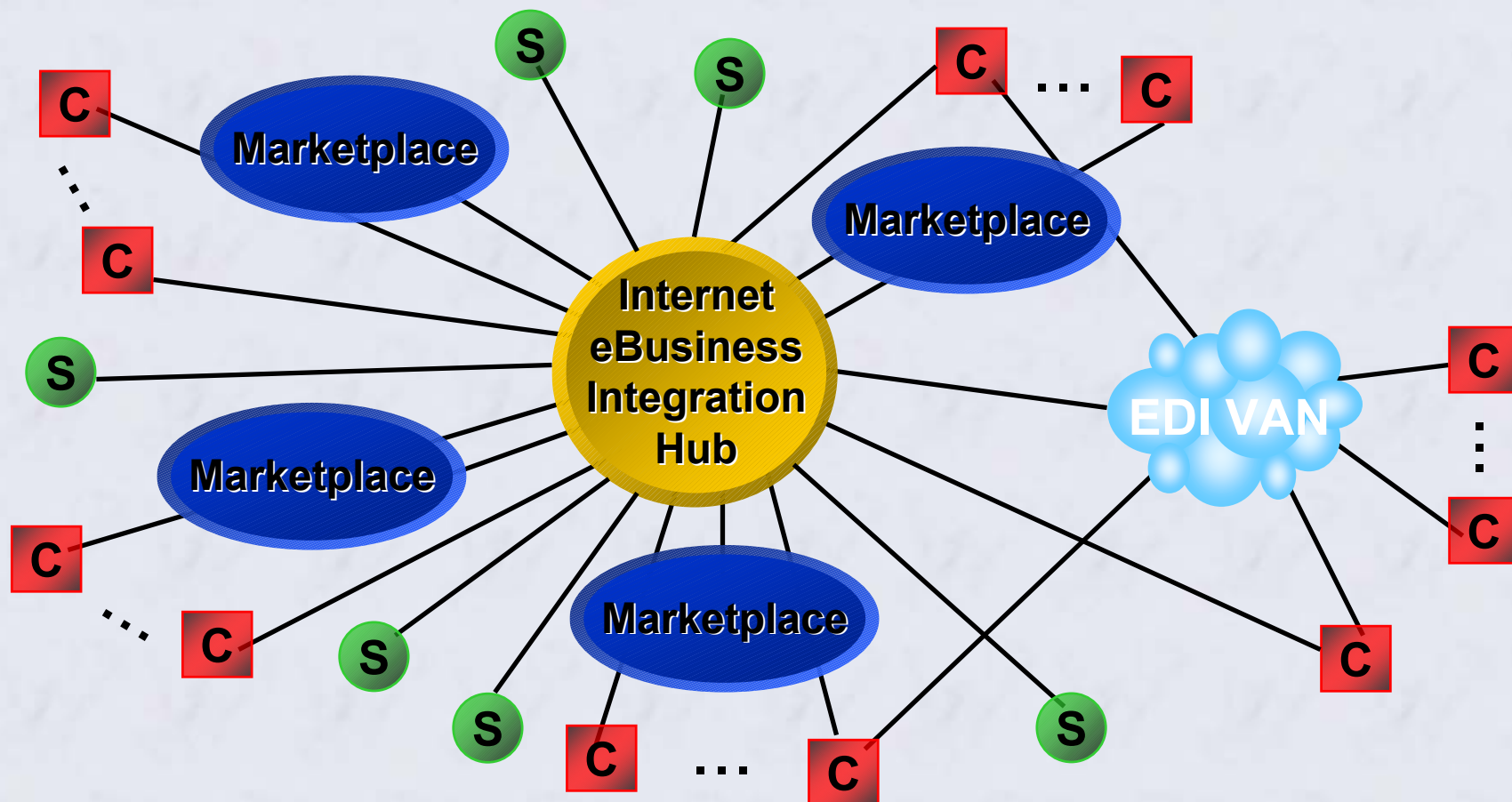**The Old Days: Business to Business eCommerce/EDI "The Integration Fur Ball"**

Marketplace

EDI VAN

C = Corporate Customer   S = Service Provider

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A New Business Model Emerges

C = Corporate Customer   S = Service Provider

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The New Business Model Provides Universal Connectivity

C = Corporate Customer   **S** = Service Provider

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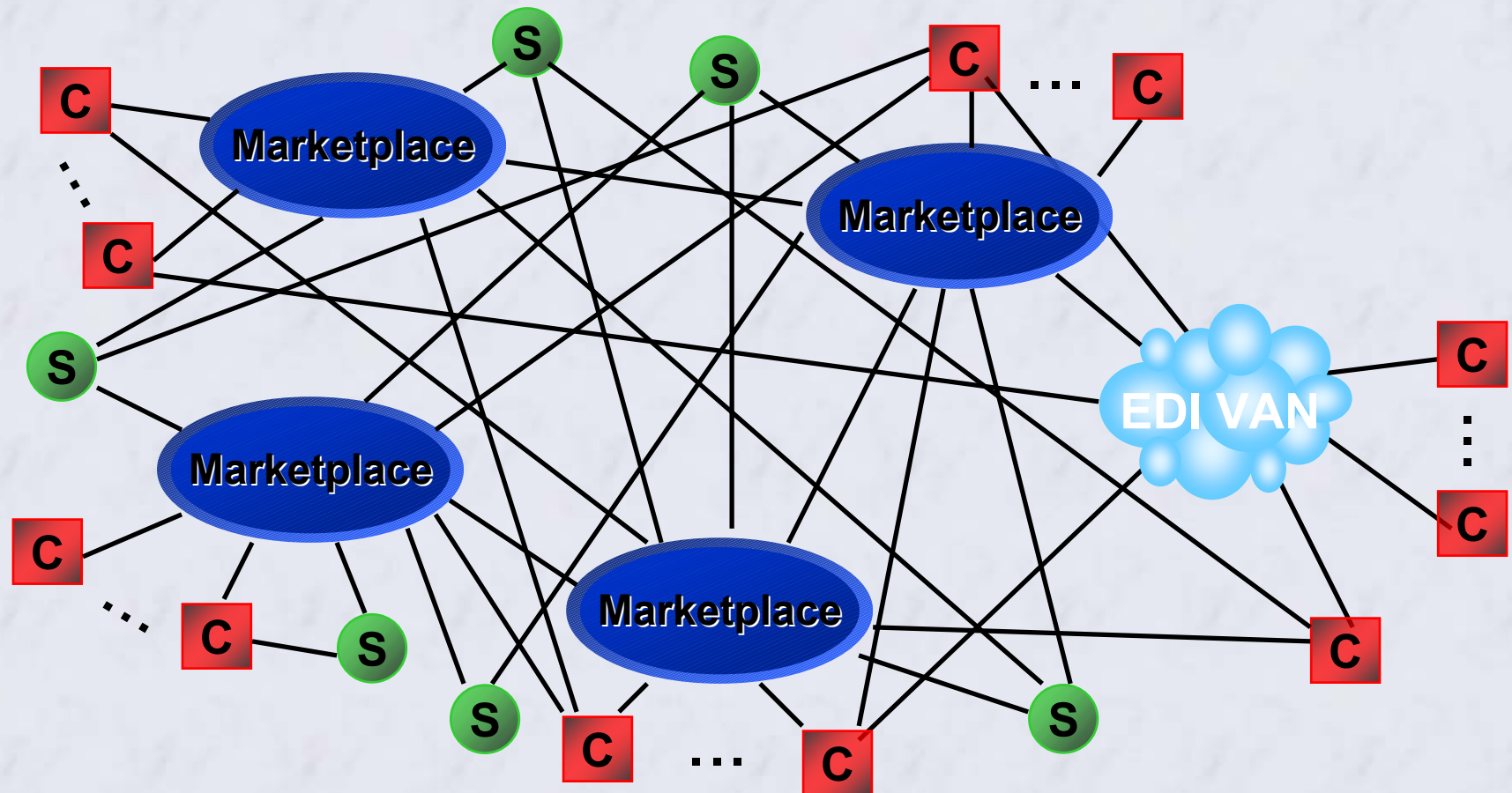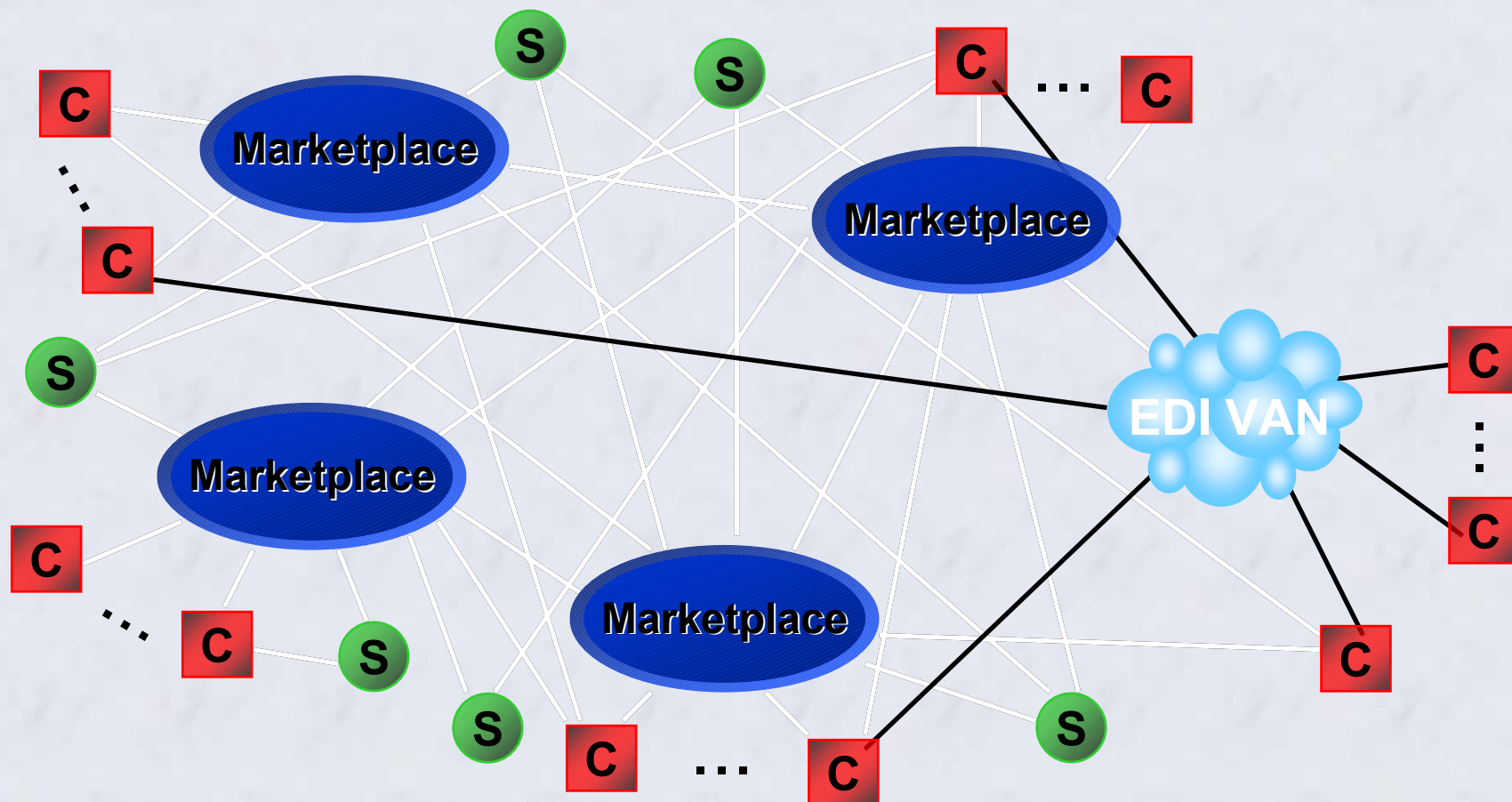
Translations & Mappings

- EDI, XML (OAG, cXML, ebXML,…)
- UDF, Proprietary
- Xtender Product Suite

Internet Based Platform

Message Queuing

Event Processing

Routing & Business Process Flow

Process Intelligence

Transport Connectivity/ Security

Msg Broker
HTTPS
S-FTP
SMTP
EDI INT AS2
MQ
Tibco
MSMQ
Web Methods
VAN Connect
Others...

GDI

eBusiness Integration Hub
A Comprehensive Integration Solution

INFORMATION
MANAGEMENT
CORPORATION
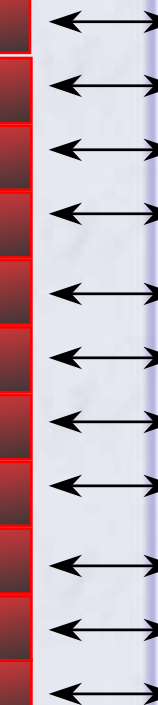
- Platform Centric Solution
  - Full Auditing and Tracking
  - Recoverability
  - Analysis and Mining
- Extensible Open Integration Framework
- Standards Based
- Visual Modeling and Development Environment

- Oracle 9i Database
- Parallel Server
- Internet Application Server
- Oracle Internet Directory (LDAP)
- Oracle Portal
- Login Server
- Common Registration

- Advanced Queuing
- Workflow
- Xtender Suites (GDI)
- Oracle Application InterConnect
- Oracle Message Broker
- e-Commerce Gateway
- Oracle Process Intelligence
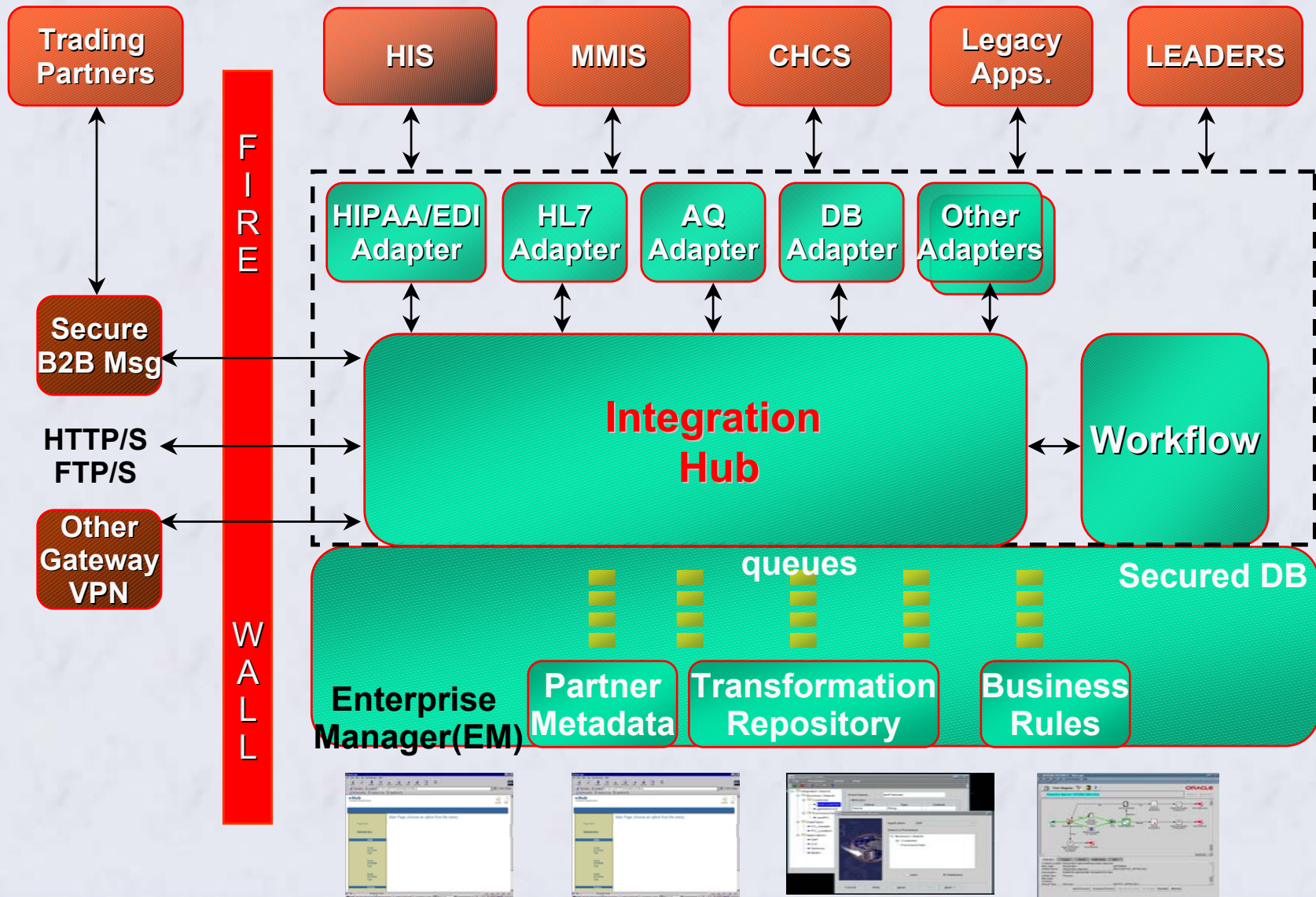- Enterprise Manager
- Business Process Modeler

Market Drivers

- Government Healthcare reform
- Bio-Terrorism (LEADERS, NEDSS & CDC initiatives)
    - Global messaging infrastructure for all public & private Healthcare Providers to collect real-time clinical data for analysis and emergency response.
- HIPAA Mandates, Security & Messaging Standards
    - Compliance by October 2003 (i.e., Y2K of Healthcare)
- State & Local
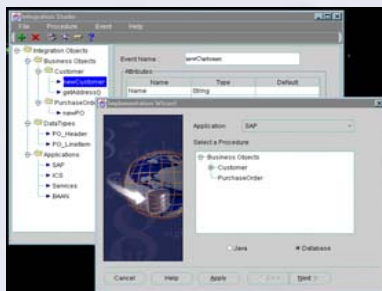   - Medicaid Federal Funding (90%) – New infrastructures must be HIPAA Compliant.

NOTE:
• LEADERS – Lightweight Epidemiology Advanced Detection & Emergency Response System
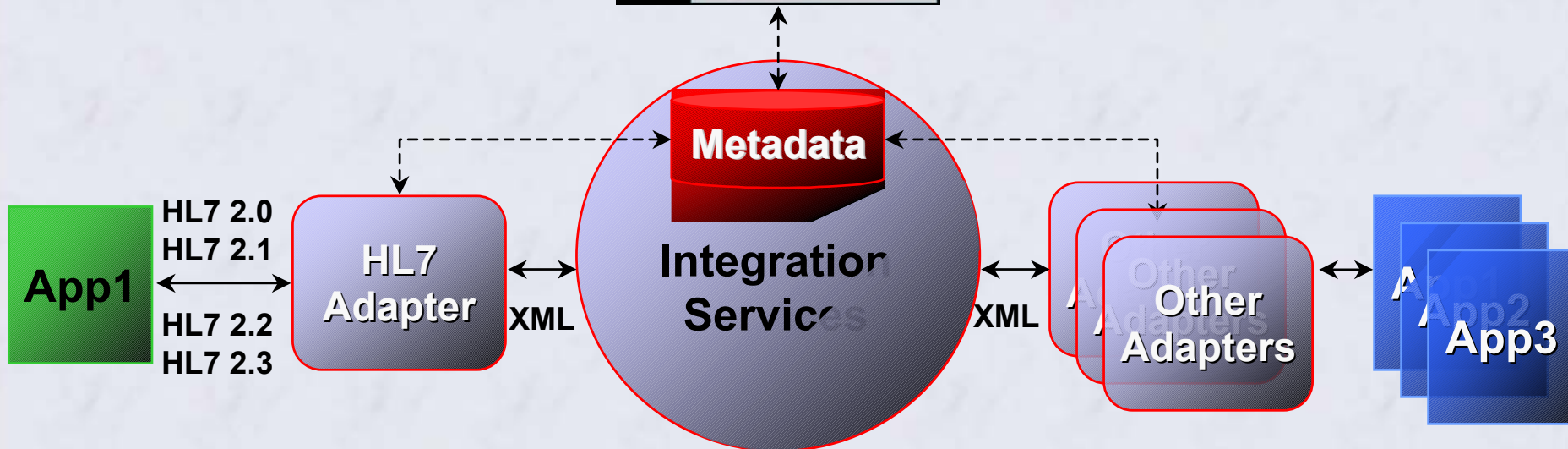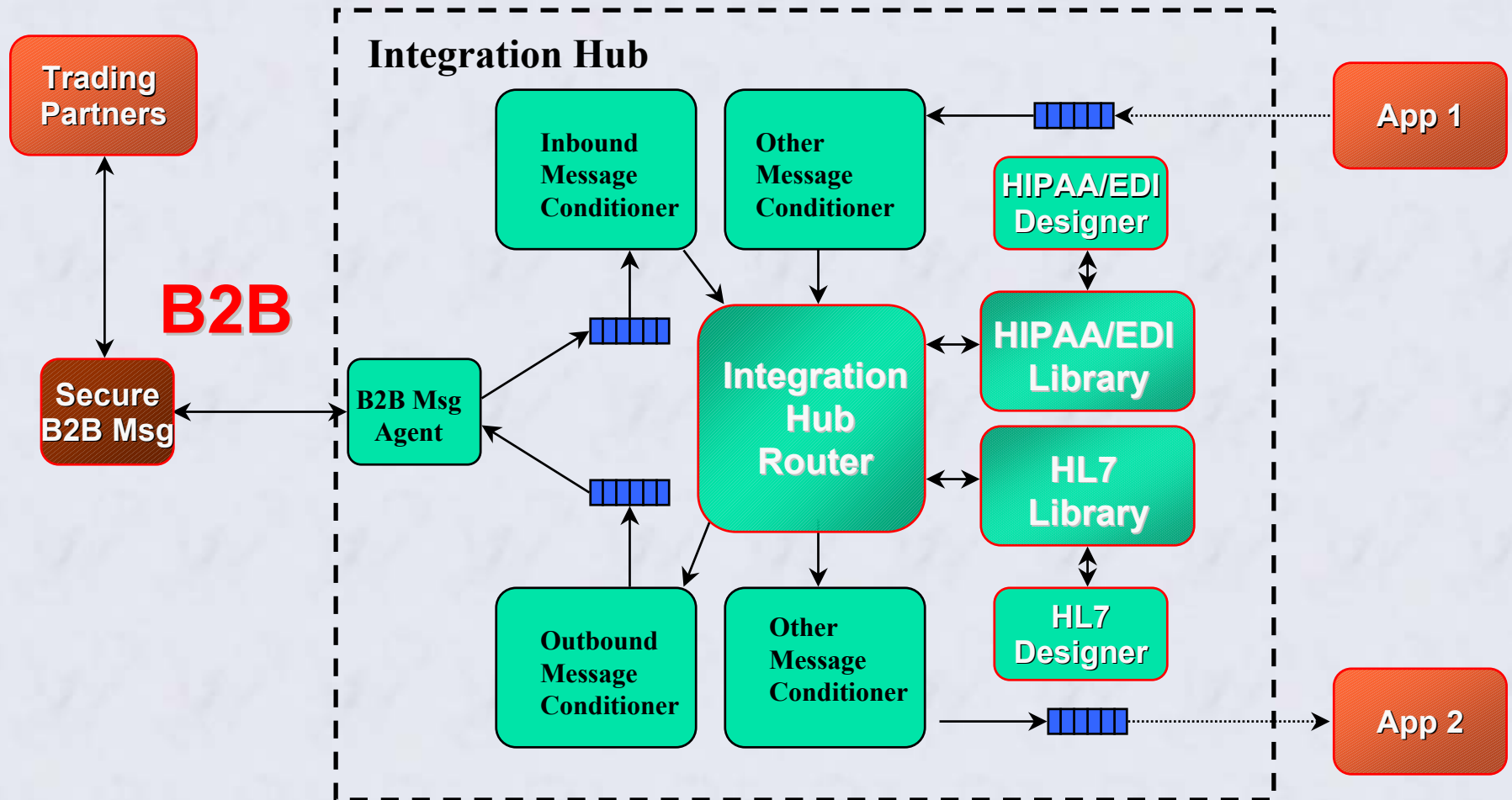*• NEDSS – National Electronic Disease Surveillance Systems*

Healthcare Integration Overview

Enterprise

Trading Partners
(Insurance, Pharmaceuticals, etc.)

B2B

Health Networks
(VA, HIS, etc.)

HIPAA

Health Portals

Web Services

A2A

HL7

Business Processes

Hospital Information Systems

Packaged Applications

Legacy Systems

Design-Time Tools

Metadata

Integration Services

App1

HL7 2.0
HL7 2.1

HL7 2.2
HL7 2.3

HL7 Adapter

XML

Other Adapters

XML

App3
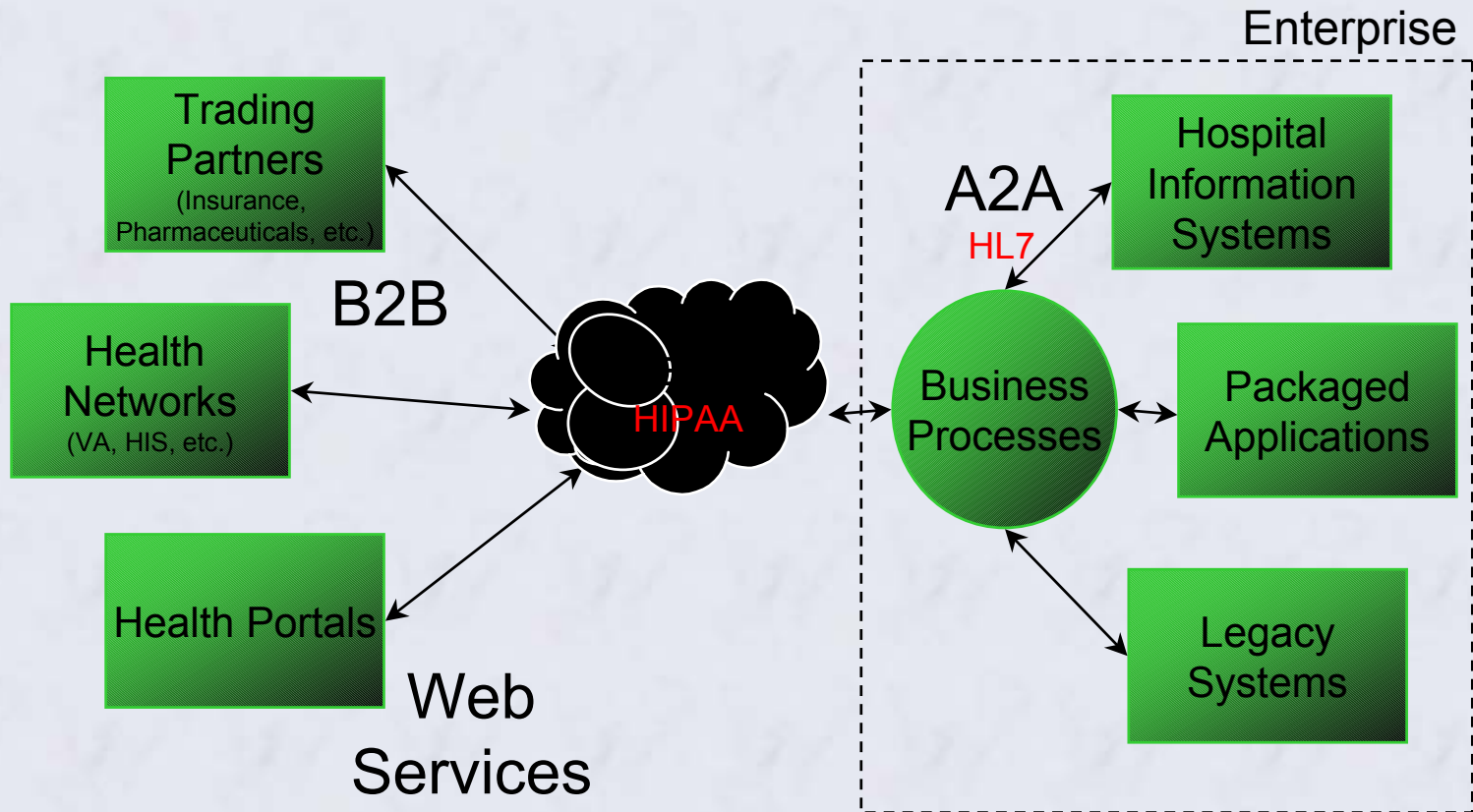
- Event Driven – Near Real Time Messaging
- ebXML Message Transport
- HL7 or EDI X12 / HIPAA Payload
- Message Encryption
- PKI – Digital Signatures

Case Study – DoD eHealth Portal

- DoD wide "Healthcare Portal"

- World's 3rd largest healthcare delivery network

- 8.6 Million Beneficiaries

- 100's of DoD Hospitals & Facilities (Worldwide)

- 40,000 Trading Partners

- 100's of Internal Systems exchanging HL7 Messages

- Mandated Compliance with HIPAA by April 2003

- Complex Messaging & Routing Requirements

- Complex BI Requirements (e.g., Early Fraud Detection)

- Company Overview
  - Nation's largest public pension fund: $170B in Assets
  - Provide retirement and health benefits
  - Serve 1.2 million current and former California public employees and their families
- Strategic Issue
  - All IT projects done in "Silos"
  - Spent lots of money on integration with no payback
- Specific Business Project
  - Needed an integrated call center to better serve customers
  - Needed to integrate several proprietary applications (8 total)
  - Needed to leverage existing skills and technology investment

Demonstration of Xtender ™ Integration Hub

Paul K. Chang

Wrap-Up Topics

- •Interest for Specific Audiences
- •Question and Answers
- •Contact Information

George Mapp, Don Betts, Paul Chang

State Medicaid and Health Agencies

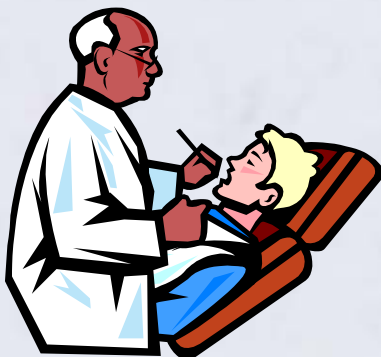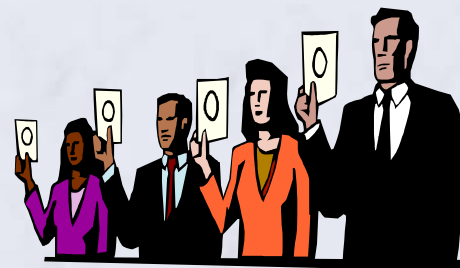**MMIS IT Providers**

HIPAA Consultants

Individual Health Care Providers

CMS and Other Federal Oversight Agencies

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